TABLE OF CONTENTS

PAPERS

ADAMS, CHRIS J. / The Raman Spectra of Solid Xenon Tetrafluoride and Its Adduct with Xenon Difluoride 391

AKHMANOV, S. A., N. I. KOROTEEV, and A. I. KHOLODNYKH / Excitation of the Coherent Optical Phonons of E_g-Type in Calcite by Means of the Active Spectroscopy Method 239

ALEKSANYAN, V. T., G. K. BORISOV, G. G. DEVYATYCH, B. F. GÄCHTER, J. A. KONINGSTEIN, and B. E. SCHNEIDER / On the Raman Spectra of Cyclopentadienyl Rare Earth Complexes 345

ALEXIEWICZ, W., T. BANCEWICZ, S. KIELICH, and Z. OŻGO / Spectral Theory of Molecular Rotation – Induced Broadening of Hyper-Raman Lines in Liquids 529

ANDERSON, A., *see* Sun, T. S.

ANDREWS, LESTER, *see* Howard, Wilmont F., Jr.

ARTHUR, J. W. and D. J. LOCKWOOD / Automation Techniques for Raman Spectroscopy 53

ARTHUR, J. W. and G. A. MACKENZIE / The External Lattice Vibrations of Orthorhombic Sulphur 199

BANCEWICZ, T., *see* Alexiewicz, W. *et al.*

BEHRINGER, J. / The Relation of Resonance Raman Scattering to Resonance Fluorescence 275

BELIKOVA, G. S., L. A. KULEVSKY, YU. N. POLIVANOV, S. N. POLUEKTOV, K. A. PROKHOROV, V. D. SHIGORIN, and G. P. SHIPULO / Light Scattering from Polaritons in *M*-Dinitrobenzene Single Crystal 493

BENCHENANE, A., L. BERNARD, et T. THÉOPHANIDES / L'Étude vibrationnelle du Paraquat 543

BENDTSEN, JØRGEN / The Rotational and Rotation-Vibrational Raman Spectra of $^{14}N_2$, $^{14}N^{15}N$ and $^{15}N_2$ 133

BENDTSEN, JØRGEN and HOWELL G. M. EDWARDS / The Rotational and Rotation-Vibrational Raman Spectra of HCN and DCN 407

BENDTSEN, JØRGEN, *see* Hegelund, Flemming *et al.*

BERJOT, M., *see* Van Labeke, D. *et al.*

BERNARD, L., *see* Benchenane, A. *et al.*

BERNARD, L., *see* Van Labeke, D. *et al.*

BERNSTEIN, H. J., *see* Verma, A. L.

BIST, H. D., *see* Jain, Y. S. *et al.*

BOBROV, A. V., J. P. MATHIEU, and H. POULET / Vibrational Spectra and Structure of Crystalline 1-3 Dinitrobenzene 381
BORISOV, G. K., *see* Aleksanyan, V. T. *et al.*
BROWN, CHRIS W., *see* Tang, Sheng-Yuh
BUTLER, IAN S. and C. FRANK SHAW III / Vibrational Spectra of Isotopically Substituted Metal Carbonyls. IV: Raman Spectra of $Mn(^{12}CO)_5Br$ and $Mn(^{12}CO)_4(^{13}CO)Br$ (Present in Natural Abundance) at 15K 257
CHAPPUT, ANDRÉ, BERNARD ROUSSEL, et GUY FLEURY / Analyse conformationnelle du propanal et de la butanone par spectroscopie Raman 117
CLARK, R. J. H. and P. D. MITCHELL / Resonance Raman Spectroscopic Study of Titanium Tetraiodide in Different Organic Solvents: Spectroscopic Constants and Half-Band Widths for the $\nu_1(a_1)$ Vibration 399
CLARK, R. J. H., *see* Sportouch, S. *et al.*
DAUMT, STEPHEN J. and H. F. SHURVELL / Gas Phase Raman Spectra of Cyclopropane-h_6 and Cyclopropane-d_6 463
DESBAT, B., *see* Huong, P. V.
DEVYATYCH, G. G., *see* Aleksanyan, V. T. *et al.*
D'ORAZIO, M. and B. SCHRADER / Calibration of the Absolute Spectral Response of Raman Spectrometers 585
DUNNING, V. D., *see* Taylor, R. C. *et al.*
DURIG, J. R. and R. W. MACNAMEE / Raman Spectra of Gaseous and Solid N_2F_4 635
DURIG, J. R., *see* Harris, W. C. *et al.*
EDWARDS, HOWELL G. M., *see* Bendtsen, Jørgen
EDWARDS, HOWELL G. M. and L. A. WOODWARD / A Raman Spectroscopic Study of the Dissociation of Chloromethyl Mercuric Nitrate in Aqueous Solutions 423
ELSDON, W. L., *see* Lockwood, D. J. *et al.*
FLETCHER, WILLIAM H. and JOHN S. RAYSIDE / High Resolution Vibrational Raman Spectrum of Oxygen 3
FLEURY, GUY, *see* Chapput, André *et al.*
FREEDMAN, P. A., *see* Willetts, D. V. *et al.*
GÄCHTER, B. F., *see* Aleksanyan, V. T. *et al.*
GALLUZZI, F., M. GAROZZO, and F. F. RICCI / Resonance Raman Scattering and Vibronic Coupling in Aquo- and Cyano-Cobalamin 351
GAROZZO, M., *see* Galluzzi, F. *et al.*
GAUFRÈS, R., *see* Sportouch, S. *et al.*
GIBBON, GERST A., *see* Miller, Foil A. *et al.*
GIGUÈRE, P. A. and T. K. K. SRINIVASAN / A Raman Study of H_2O_2 and D_2O_2 Vapor 125
GÖRNER, H., M. MAIER, and W. KAISER / Raman Gain in Liquid-Core Fibers 363
HAANSTRA, J. H., *see* Van den Boom, H.
HAMAGUCHI, HIRO-O, ISSEI HARADA, and TAKEHIKO SHIMANOUCHI / Resonance Raman Effect of Octahedral Complex Ions, $PtBr_6^{2-}$ and PtI_6^{2-} 517

HARADA, ISSEI, *see* Hamaguchi, Hiro-O *et al.*
HARADA, ISSEI, *see* Tsuboi, Masamuchi *et al.*
HARRAND, M. / Raman Study on Para Nitroaniline Single Crystal. I: Lattice Vibrations 15
HARRIS, W. C., A. D. LOPATA, and J. R. DURIG / The Vibrational Spectra of 3,3-Difluoroxetane 481
HAUSSÜHL, S., *see* Montero, S. *et al.*
HEGELUND, FLEMMING, JØRGEN BENDTSEN, and NINA ROTHE ZANGENBERG / The ν_{11} Rotation-Vibrational Raman Band of Allene 31
HIRAKAWA, AKIKO Y., *see* Tsuboi, Masamichi *et al.*
HOWARD, WILMONT F., JR. and LESTER ANDREWS / Matrix Raman Spectra of the Molecular Halogens: Resonance Raman Spectra of Isolated and Aggregated I_2 447
HUONG, P. V. and B. DESBAT / The Vibrational Spectrum of OH_3^+ Ion 373
IIJIMA, M., *see* Udagawa, Y. *et al.*
IRISH, D. E., *see* Lockwood, D. J. *et al.*
ITO, M., *see* Udagawa, Y. *et al.*
ITO, MITSUO, *see* Urabe, Tetsuo
JACON, M., *see* Van Labeke, D. *et al.*
JAIN, Y. S., H. D. BIST, and A. L. VERMA / Optical Phonons in α-$NISO_4 \cdot 6H_2O$ Single Crystal 327
JAKUBINEK, B. G., *see* Koningstein, J. A.
JONES, W. J., *see* Willetts, D. V. *et al.*
KAISER, W., *see* Görner, H. *et al.*
KHOLODNYKH, A. I., *see* Akhmanov, S. A. *et al.*
KIELICH, S., *see* Alexiewicz, W. *et al.*
KONINGSTEIN, J. A. and B. G. JAKUBINEK / Exciting Frequencies and Depolarization Ratios for Resonance Raman Effects 317
KONINGSTEIN, J. A., *see* Aleksanyan, V. T. *et al.*
KOROTEEV, N. I., *see* Akhmanov, S. A. *et al.*
KRISHNAMURTHY, N. / Raman Spectrum of Thallium Bromoiodide 341
KULEVSKY, L. A., *see* Belikova, G. S. *et al.*
LE CALVÉ, N., S. PARENT, et B. PASQUIER, avec la collaboration technique de F. ROMAIN / Spectres Raman de basses fréquences de cristaux de dérivés benzéniques paradisubstitues: *p*-$Br_2C_6H_4$, *p*-$Br_2C_6D_4$, *p*-$BrClC_6H_4$ et *p*-ClC_6H_4. Étude du désordre dans le dérive *p*-$BrClC_6H_4$ 431
LOCKWOOD, D. J. / Isolating the Totally Symmetric Raman Spectrum of Cubic Crystals: The A_1 Spectrum of $Cr_3B_7O_{13}Cl$ 555
LOCKWOOD, D. J., J. SCOTT, W. L. ELSDON, and D. E. IRISH / Raman Spectral Studies of *Cis*-2-Butene-Benzene Mixtures 593
LOCKWOOD, D. J., *see* Arthur, J. W.
LOPATA, A. D., *see* Harris, W. C. *et al.*
LUTZ, MARC / Resonance Raman Spectra of Chlorophyll in Solution 497
MACKENZIE, G. A., *see* Arthur, J. W.

MACNAMEE, R. W., *see* Durig, J. R.
MAIER, M. *see* Görner, H. *et al.*
MATHIEU, J. P., *see* Bobrov, A. V. *et al.*
MATHIEU, J. P., *see* Poulet, H.
MILLER, FOIL A. and A. MONROE SNIDER, JR. / Raman Depolarization Ratios and the Symmetry of $Si(NCO)_4$ and $Ge(NCO)_4$ 377
MILLER, FOIL A., JAMES PERKINS, GERST A. GIBBON, and B. A. SWISSHELM / Trisilylamine: Nitrogen Isotope Effect in the Raman Spectrum and Planarity of the NSi_3 Skeleton 93
MITCHELL, P. D., *see* Clark, R. J. H.
MONTERO, S., R. SCHMÖLZ, and S. HAUSSÜHL / Raman Spectra of Orthorhombic Sulfate Single Crystals. I: K_2SO_4, Rb_2SO_4, Cs_2SO_4 and Tl_2SO_4 101
NEMES, L. and S. SUZUKI / Vibration-Rotation Interaction in the Gas-Phase Raman Spectrum of Ethylene 193
NISHIMURA, YOSHIFUMI, *see* Tsuboi, Masamichi *et al.*
NOLIN, C., J. TREMBLAY, and R. SAVOIE / Vibrational Spectra of SO_2F_2 in the Condensed States 71
OŻGO, *see* Alexiewicz, W. *et al.*
PARENT, S., *see* Le Calvé, N. *et al.*
PASQUIER, B., *see* Le Calvé N. *et al.*
PERKINS, JAMES, *see* Miller, Foil A. *et al.*
POLIVANOV, YU. N., *see* Belikova, G. S. *et al.*
POLUEKTOV, S. N., *see* Belikova, G. S. *et al.*
POULET, H. and J. P. MATHIEU / Raman Spectra and Crystal Structure of Sodium Periodates 81
POULET, H., *see* Bobrov, A. V. *et al.*
PROKHOROV, K. A., *see* Belikova, G. S. *et al.*
RAYSIDE, JOHN S., *see* Fletcher, William H. *et al.*
RICCI, F. F., *see* Galluzzi, F. *et al.*
ROMAIN, F., *see* Le Calvé, N. *et al.*
ROUSSEL, BERNARD, *see* Chapput, André *et al.*
RUDOLPH, R. W., *see* Taylor, R. C. *et al.*
SAVOIE, R., *see* Nolin C. *et al.*
SCHMÖLZ, R., *see* Montero, S. *et al.*
SCHNEIDER, B. E., *see* Aleksanyan, V. T. *et al.*
SCHRADER, B., *see* D'Oranio, M.
SCOTT, J., *see* Lockwood, D. J. *et al.*
SHAMIR, JACOB and ATARA SILBERSTEIN / Laser Ramer Spectrum of the Addition Compound of Uranium and Phosphorus Pentachlorides ($UCl_5 \cdot PCl_5$) and Its Structure 623
SHAW III, C. FRANK, *see* Butler, Ian S.
SHIGORIN, V. D., *see* Belikova, G. S. *et al.*
SHIMANOUCHI, TAKEHIKO, *see* Hamaguchi, Hiro-O *et al.*

SHIPULO, G. P., *see* Belikova, G. S. *et al.*
SHURVELL, H. F., *see* Daunt, Stephen J.
SILBERSTEIN, ATARA, *see* Shamir, Jacob
SNIDER, A. MONROE, JR., *see* Miller, Foil A.
SPORTOUCH, S., R. J. H. CLARK, and R. GAUFRÈS / Vapour Phase Raman and Infrared Spectra of, and Vibrational Assignments for Sulphuryl Fluoride; Application of the Trace Scattering Method for the Assignment of Totally Symmetric Vibrations 153
SRINIVASAN, T. K. K., *see* Giguère, P. A.
SUN, T. S. and ANDERSON, A. / Raman Spectra and Lattice Dynamics of the Halogen Cyanide Crystals 573
SUZUKI, S., *see* Nemes, L.
SWISSHELM, B. A., *see* Miller, Foil A.
TANG, SHENG-YUH and CHRIS W. BROWN / Raman Spectrum of Matrix Isolated Hydrogen Sulfide 209
TAYLOR, R. C., R. W. RUDOLPH, R. T. WYMA, and V. D. DUNNING / Spectroscopic Studies of Lewis Acid-Base Complexes. III: Vibrational Frequencies, Assignments and Normal Coordinate Analyses for Isotopic Varieties of Phosphine Borane and Trifluorophosphine Borane 175
THÉOPHANIDES, T., *see* Benchenane *et al.*
TREMBLAY, J., *see* Nolin, C. *et al.*
TSUBOI, MASAMICHI, AKIKO Y. HIRAKAWA, YOSHIFUMI NISHIMURA, and ISSEI HARADA / On the Excited-State Geometry of the Adenine Residue as Revealed by a Preresonance Raman Effect 609
UDAGAWA, Y., M. IIJIMA, and M. ITO / Depolarization Ratio in Preresonance Raman Effect 313
URABE, TETSUO and MITSUO ITO / Excitation Wavelength Dependence of the Polarized Raman Spectrum of *p*-Dichlorobenzene Single Crystal 301
VAN DEN BOOM, H. and J. H. HAANSTRA / Raman Spectra of Vibrational Modes in Spinel $CdIn_2S_4$ 265
VAN DER MAAS, J. H. and T. VISSER / A Systematic Approach to the Structure Elucidation of Carbon-Hydrogen and Hydroxy Compounds by Means of Raman Spectroscopy with Laser Sources 563
VAN LABEKE, D., M. JACON, M. BERJOT, et L. BERNARD / Étude théorique de l'effet Raman de résonance des molécules diatomiques et polyatomiques 219
VERMA, A. L. and H. J. BERNSTEIN / Resonance Raman Spectra of Protohemin and Protohemin-Imidazole Complex 163
VERMA, A. L., *see* Jain, Y. S. *et al.*
VISSER, T., *see* Van der Maas, J. H.
WILLETTS, D. V., P. A. FREEDMAN, and W. J. JONES / A Czerny-Turner Spectrograph Incorporating a 2-Stage Image Intensifier for the Study of Very Weak Raman Spectra 249
WOODWARD, L. A., *see* Edwards, Howell G. M. *et al.*

WYMA, R. J., *see* Taylor, R. C. *et al.*
ZANGENBERG, NINA ROTHE, *see* Hegelund, Flemming *et al.*

RESEARCH NOTES

FAWCETT, V., R. J. B. HALL, D. A. LONG, and V. N. SANKARANARAYANAN / A Raman Spectroscopic Study of the Ferroelectric Phase Transition in K_2SeO_4 629
GRIFFITH, DAVID W. T., *see* Shurvell, H. F. *et al.*
HALL, R. J. B., *see* Fawcett, V. *et al.*
KENT, JAY E., *see* Shurvell, H. F. *et al.*
LONG, D. A., *see* Fawcett, V. *et al.*
SANKARANARAYANAN, V. N., *see* Fawcett, V. *et al.*
SHURVELL, H. F., DAVID W. T. GRIFFITH, and JAY E. KENT / Raman Spectra of Dewar Benzene and Benzvalene 147

Addendum to Paper by R. A. Peters, W. J. Walker, and Alfons Weber 443